

Cyber subsidiary material Exchange Transfer System for the small and medium-sized businesses' purchasing cost reduction

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Abstract: According to the developing countries high economic growth, the rapid growth of the subsidiary material consumption and some countries' efforts to weaponize the resources are working as a factor to raise the prices of the subsidiary material. The instability of the small and medium-sized businesses' subsidiary material demand and supply works as a major factor to weaken the small and medium-sized businesses' competitive power and therefore necessitates the stable subsidiary material demand and supply strategies. The indirect cost is taking a big part in the small and medium-sized businesses' subsidiary material purchasing and the indirect cost reduction bring the small and medium-sized businesses' subsidiary material pricing reduction effect, for which we need the indirect cost reduction methods and for the indirect cost reduction, we need the subsidiary material Exchange Transfer System. The main functions of the subsidiary material media exchange System are as follows: online industry subsidiary material related trend and product information provision, company inspection information provision for the overseas suppliers, negotiation, contract management work performance and the actual trading work performing System. By developing these systems, we can enforce the small and medium-sized companies' competitive power and vitalize the port economy.

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1. Introduction

The raw material pricing fluctuations due to the localized existence of the resources and the demand and supply imbalance in the past, added together with the rapid consumption growth in 1990s of China and India, who take up the half of the world population, are drawing the supply and demand imbalance of the raw materials. At the same time, beginning with Venezuela in 1998, the south American countries are showing the strong resource nationalism trend with the raw materials such as petroleum and natural gas, which intensifies the world efforts to secure the resources.

The subsidiary material is all the raw material and resources used in the product manufacturing process. The raw material takes up the most part of it and the subsidiary material is the secondary material used for the process from the raw material to the complete product. In other words, we can categorize them into the two groups-raw material and subsidiary material-depending on their consumption ratio.

Lately in the raw material market as there are M&A(Mergers and Acquisitions) actively in progress among the big companies, forming the blocks transcending the local economy, securing the major raw material and expanding the strategic business areas within the major resources holding countries,

intruding the raw material market, and therefore becoming an anxiety factor for the international raw material supply and demand.

While the small and medium-sized businesses are chronically suffering from the management crisis drawn from the subsidiary material disaster, only a few, 17.1%, small and medium-sized businesses can supply of their subsidiary materials directly and the rest 82.9% turned out to depend on the exterior sources, for which the strategies to supply the subsidiary material stably are urgently needed (News wire, 2004).

With the resources weaponization trend, we need the industry subsidiary material securing strategy and small and the support strategy for the medium-sized businesses. While big companies have their own delivery systems secured, the small and medium-sized businesses do not own the delivery infra, and therefore are in the difficult situations of not being able to meet the product submission deadlines, or submission of the products with defects, payment problems, etc. portraying a serious socio-economic problems.

To solve the small and medium-sized businesses subsidiary material distribution environment problems, we need to establish the subsidiary material Exchange Transfer System to play the role to prepare and

distribute the general industry subsidiary material imported from the overseas. According to the Federation of the small and medium-sized businesses 2009 report, the present subsidiary material industry is going through the difficulties in management due to the manufacturing cost rise such as the raw material, in securing the fund availability, manpower supply and demand, etc., the raw material pricing variation takes up 47.4%. In order to overcome these difficulties, the government is making efforts to stabilize the subsidiary material supply and demand by improving the purchasing cost reduction and the delivery methods, the subsidiary material pricing and supply and demand circumstances, etc. and through the related information provision.

This study will examine the domestic subsidiary material purchasing circumstances and the problems to propose the industry subsidiary material Exchange Transfer System establishment methods for the effective and logical purchasing cost reduction.

The subsidiary material exchange system is an electronic exchange technology(Il-Yoo, 2011), and there are, for the existing related study, the internet exchange search and purchasing support, purchasing products and sales recommendation system, internet business model design and its application(Y. Wan, 2003), consumer performance analysis(Forester Research, 2001) and comparison support function technology development and establishment(A. Rajaraman, 1998) studies.

2. The reality and difficulties the small and medium-sized businesses are facing

The small and medium-sized businesses in Korea, as shown in the table 1, take up a big ratio in terms of the number of the companies and of the people working in the field, in comparison with the U.S., Japan, and China. The independent company owners are 22.8% (January 2011) of the total number of the working people, 23,200,000, which is 1.7 times as much as the OECD average 13.6%, in the small and medium-sized businesses' added value 49.2%, which is lower than Japan(64.4%), China(63.9%), and in the small and medium-sized manufacturing industries standard, mostly less than \$1 million small-sized exporting companies.

Table 1. The number of the small and medium-sized companies and of the workers ratio in each country

Division	Korea (2009)	Japan (2006)	China (2009)	U.S. (2007)
Companies	99.9	99.1	99.2	49.6
Workers	87.7	77.8	76.9	49.6

2.1 The small and medium-sized businesses raw material supply and demand support strategy and method

Lately in order to meet the fluctuating international raw material pricing, the government is making efforts to facilitate the short-long term material supply and demand and the pricing stability, particularly implementing the support strategies for the small and medium-sized businesses raw material supply and demand, of which the raw material supply and demand stabilization strategy through the common purchasing method. Also, for the small and medium-sized businesses facing the difficulties in supply and demand, due to the rapidly rising international raw material pricing, there are diverse systems such as the credit purchasing available, along with the raw material renting.

As the resources holding countries (production countries) tend to weaponize their resources, it is more and more difficult to secure the resources, and in order to provide the raw material on timely basis to the small and medium-sized businesses that need them as the main production material, the government is running the "added assignment" system and "urgent assignment" system for their support. The "urgent assignment" system assigns the added raw material to the small and medium-sized businesses that need them urgently in addition to the company allotted limit amount. The "added assignment" system assigns the added raw material to the small-sized businesses that lack in their power to respond to the raw material fluctuations in addition to the company allotted limit amount.

There are support strategies to reduce the distribution cost for the raw material supply and demand original cost reduction, such as transportation cost - storage cost, etc. Reviewing the domestic companies per function distribution ratio, the storage cost is the highest as 52.6%, the next is the transportation cost 41.9%, packaging 3.4%, loading 1.6%. The reason the storage cost ratio is higher than the transportation cost ratio is that lately centered on the small and medium-sized companies, the interest expenses increased greatly due to the inventory burden.

The government is actively applying the advanced countries' distribution management methods, for the individual companies' distribution cost reduction, such as the shipping frequency improvement and loading rate improvement, transportation and storage outsourcing, transportation and distribution center joint usage, systematic distribution cost estimation and management, shipping route improvement.

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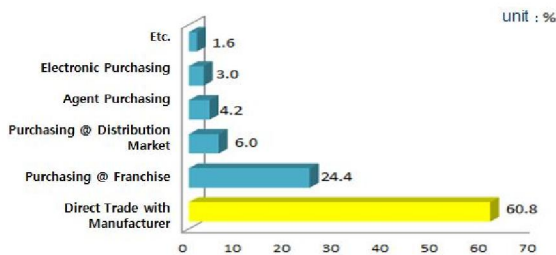
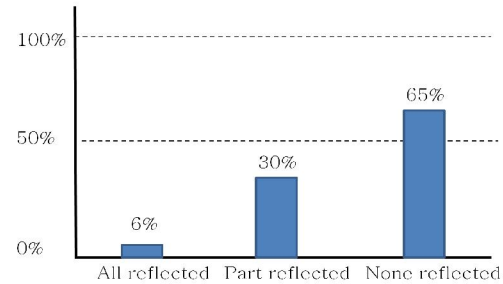
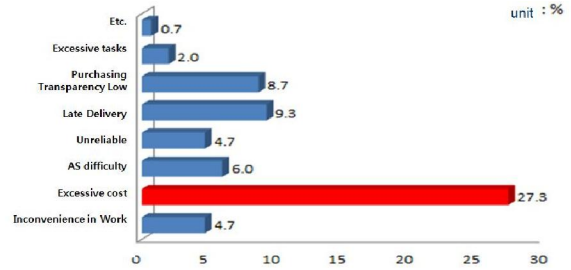


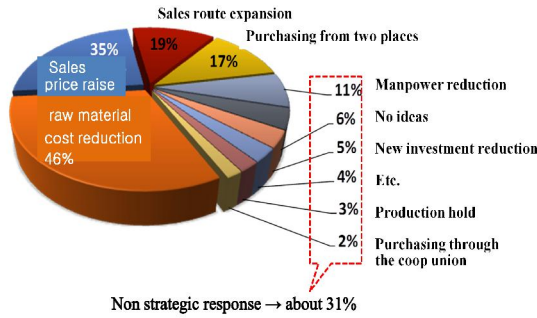
Figure 1. raw material purchasing path

In case the companies purchase the raw materials through the direct exchange with the suppliers, as shown in figure 2, the excessive expenses and the shipping and distribution abilities fell short in comparison with the companies specialized in distribution; in the electronically purchasing companies, they have the difficulties in the raw material purchasing routes, such as in the electronic purchasing methods or in the electronic purchasing induction obstacles(Small and medium-sized business administration, 2007)..

businesses

The subsidiary material consumption rapid growth according to the economic growth in the developing countries and the weaponization of the resources in some countries are working as a factor to raise the pricing of the subsidiary materials; the instability of the subsidiary material supply and demand of the small and medium-sized businesses works to weaken the competitive power of the small and medium-sized businesses and they need the strategies for the stable subsidiary material supply and demand. The subsidiary material exchange system development for the small and medium-sized companies facilitate the small and medium-sized businesses with the indirect cost reduction in the

subsidiary material purchasing of the small and medium-sized companies competitive power enforcement and the economic growth through the port vitalization.



3.1 Online media exchange system

It is a system in the form of the media trading that function as the trading negotiation and contract management. The main functions are as follows: the domestic import companies demand creates the purchasing request function, demand investigation result based purchasing plan establishment function, bidding function (bidding request, bidding registration, inspection and winner announcement), pricing negotiation and contract conclusion content management function.

The overseas suppliers' bidding participation functions are provided with the overseas suppliers' information management function, bidding announcement statement search function, bidding participation, result search function and contract management function. The trading exchange induces the on-off line exchange with the overseas companies as targets, implementing the media trading.

3.2 The company inspection system

In order to manage the company inspection information with the target of the overseas supplier and domestic companies, the self company inspection information DB establishment, the exterior inspection organization application and inspection result's DB reflection functions are realized. Through the induction of the credit exchange, the financial inspection and the import-export insurance related linkage functions are realized.

3.3 Cyber exhibition

By realizing the domestic suppliers 2D, 3D online whole market, it provides the suppliers' 3D product exhibition and the 2D product trend and the information, and thereof realize the function for the pricing input and correction function. In order to find the industry subsidiary material overseas supplier, the catalogue, directory system establishment, homepage establishment function, Circular Letter /Offer send-out functions are realized.

Through the online whole market trading related works are linked such as product search or sample request, etc. The overseas subsidiary material provide the companies the periodic or the real time pricing and related information with the pricing input per the market pricing variation, to realize the open system and supply amount and per condition arrangement or the search function. It provides the overseas supplier the periodic update or the input function linked to the before Cyber market and the industry subsidiary material information and the product trend.

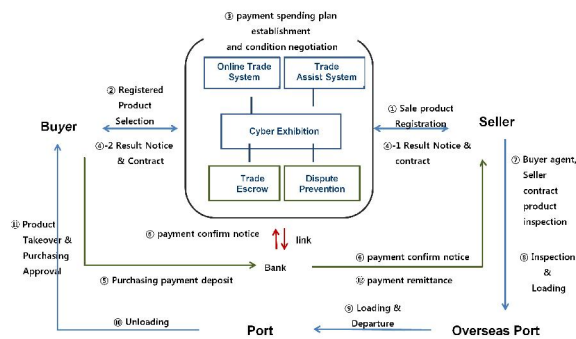


Figure 5. Industry subsidiary material trading method and system

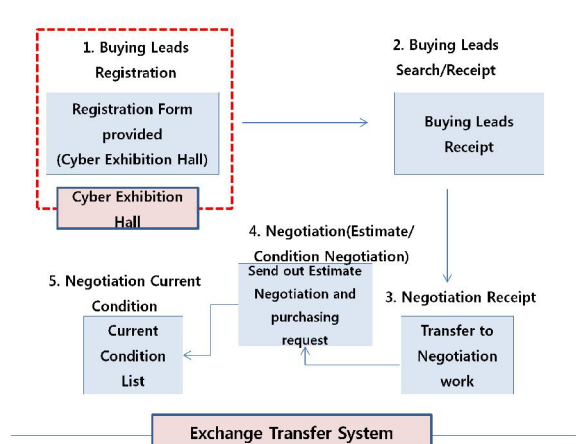


Figure 6. Cyber exhibition hall

The Cyber exhibition hall, as shown in figure 6, is a part of the media exchange system and a products' permanent exhibition space for the media exchange, a system to activate the exchange and the direct exchange and auction, and the reverse auction. With the diverse methods advertise the product and selling companies and implement the marketing through the email and the web address.

3.4 The trading exchange assistance system

For the industry subsidiary material information and for the trading general information link provision, link to the e-MP, Korea import association, and Korea PDS. By linking to the electronic trading solutions, after the trading contract conclusion for the electronic trading service provision, provide the system link support to the national electronic trading based system for the electronic performance of the trading work. For the import-export performance search function link, the following functions are realized: the import-export performance search function according to the companies, per item / per country / per continent statistical search function.

4. Conclusion

By using the industry subsidiary material Exchange Transfer System, and by inducing the direct exchange method, the illogical subsidiary material distribution can be improved, securing the subsidiary materials on stable basis and performing the public function through the small and medium-sized businesses' supply and demand support.

Due to the indirect cost reduction through the various new information and media in the subsidiary material purchasing, it is expected to increase the interests of the small and medium-sized company. Due to the subsidiary material supply and supply and

demand companies international mutual networks can be established. By activating the progressive concept electronic trading, the small and medium-sized businesses can enforce their competitive power, and secure their industry subsidiary material.

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